

AGRICULTURE  
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# University of Saskatchewan

## COLLEGE OF AGRICULTURE

CIRCULAR No. 1

# TILLAGE METHODS

FOR

## *Central and Western Saskatchewan*

No matter what our business is, if we follow it with open minds, we are continually learning something new in connection with it—something that will enable us to prosecute it more successfully. The greatest business in Saskatchewan is that of farming—the extraction of vegetable products from the soil, in the form of grains, grasses, roots and vegetables, and placing these upon the market in the best form, either in the raw material, as wheat, etc., or in a more finished product, such as beef, pork, mutton, milk, butter, etc.

Farmers as a class are noted for their keen powers of observation. Their work is so varied, the raising of crops so dependent upon favorable soil and weather conditions, the production of animals upon a knowledge of the principles of breeding, feeding and management, and the success of the business of farming so concerned with the constant employment of efficient labor and a knowledge of markets, that farmers, of necessity, though perhaps unconsciously, become careful observers of natural phenomena about them.

We know of no farming country that affords greater opportunities for the development of the habit of observation than Saskatchewan. The soil, climate, vegetation and water supply are so variable that only the keenest and best trained can move from one district to another and be sure that he is doing his work in such a way as to achieve the best results.

The soil, on the whole, is very fertile, but is very different in its physical properties. There are the heavy clay soils of the Regina and Kindersley districts, and these differ much in their workability; the black, rich soils of the Indian Head and other districts; the chocolate loam of the Dundurn, Saskatoon, Tessier and Kinley; the rich vegetable loams of the Carrot River district; and there are light and sandy loams, all differing widely in their ability to hold moisture,

retain heat, and differing also as to the amount of power necessary to perform the many important duties of plowing, harrowing, cultivating, etc.

Rains are more frequent and more abundant in some parts of the province than in others. Late spring and early fall frosts are more apt to damage in some parts than in others. Insects vary in their methods and places of attack. Weather conditions are as favorable as can be found anywhere, yet they vary sufficiently to prevent the farmer's life from growing monotonous, and make it necessary for him to change quickly from one kind of work to another.

The years of 1911 and 1914 have both impressed upon us many valuable lessons—the same lessons that the early settlers had to learn in the older parts of Saskatchewan. Nineteen hundred and eleven had much rain and an early fall frost, and 1914 had very little rain and early frost. This year all the area from the southwestern to the northeastern boundary has suffered from drought. There never was a more favorable seeding time, but little rain followed to carry the crop to maturity, and during July for three weeks very hot winds prevailed. The result was that over a very large area in the western part there was little to harvest. But in every district one or more farmers had a fair crop—in some cases good crops—even in this very dry year. It was not luck that favored these exceptional farmers. It was simply that they had outlined a well-thought-out plan for doing their work in 1913 and had worked strictly to the outline. All who had the opportunity of preparing land in 1913 had equal chances for reaping a crop in 1914. The method of these successful men was simple. It was based either upon careful personal observation, or upon the advice of someone who had observed carefully the general conditions that prevail in the district in question. The kind of soil and subsoil was noted; the normal rainfall and the time at which it usually comes; the prevailing winds; the kind of plow (mould board or disk) that does the best work; the amount of power necessary to do effective work; the value of the plow and harrow in conserving sufficient quantities of water for average grain yields; the depth of plowing for summerfallow; the best methods of preparing land for second crop after summerfallow; the best method of breaking and preparing new prairie for crops. These and many other things must be learned by someone before the agriculture of a district can become productive and remunerative to those engaged in its pursuit.

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### VALUE OF A GOOD SUMMERFALLOW

It is absolutely necessary, with our present knowledge, to have a part of our land well summerfallowed each year. Whether it be a third or a half of our farm depends upon local weather conditions. A good summerfallow is a much different thing from what many of us think it is. On the Experimental Field at the University in 1913, summerfallow was made in seventeen different ways. The fallow that was plowed June 1st, 1913, yielded in 1914, 10 bushels, 24 lbs. wheat; 12 bushels, 6 lbs. oats; 11 bushels, 16 lbs. barley more than that plowed July 1st, and the fallow plowed June 15th, 1913, yielded 10 bushels, 20 lbs. wheat; 7 bushels, 10 lbs. oats, and 8 bushels, 28 lbs.

barley more than the fallow plowed July 1st. These are not new facts. It was long ago established by Mr. Angus MacKay, Superintendent of the Indian Head Experimental Farm, that early-made summerfallows assured the farmer the best returns, and kept his land freer from weeds than late made. Yet, with all the information at hand, large numbers leave the plowing of their summer fallows until July and August.

A summerfallow of 108 acres on the University Farm plowed seven inches deep and harrowed **IMMEDIATELY** during the first three weeks of June, 1913, yielded 25 bushels No. 1 Northern Marquis wheat per acre in 1914. The rainfall on the farm from before seeding until the crop was harvested was less than two inches—almost inconsiderable. The results this year could not have been obtained if the summerfallow had not been well made in 1913. It was prepared as follows:

In the fall of 1912 the land was disked to make a mulch that would conserve the moisture and tend to collect it near the surface. This had the effect of germinating weed and other seeds in the spring. The plowing was done the first three weeks in June, seven inches deep, and harrowed immediately—the harrows followed the plow. After every rain the crust was broken by using the harrows; a double purpose was served—small weeds, such as lambs' quarters, etc., were killed and moisture conserved, and the ground packed into a suitable seed bed. A forty-acre field of oats on land similarly prepared yielded 62½ bushels per acre, while wheat on fall and spring plowing yielded 13 bushels per acre.

DEAN W. J. RUTHERFORD,

Agricultural College, University of Saskatchewan, Saskatoon.

PROFESSOR JOHN BRACKEN,

Agricultural College, University of Saskatchewan, Saskatoon.